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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/805,825

03/22/2004

Kishio Yokouchi

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09/07/2006

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EXAMINER

SONG, SARAH U

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/805,825

Applicant(s)

YOKOUCHI, KISHIO

Examiner

Sarah Song

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.  
4a) Of the above claim(s) 13-32 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's communication filed on June 12, 2006 has been carefully studied by the Examiner. The arguments advanced therein, considered together with the amendments made to the claims, are persuasive and the rejections based upon prior art made of record in the previous Office Action are withdrawn. Claims 1 and 6 are amended. Claims 1-32 are pending. Claims 13-32 are withdrawn from further consideration as being drawn to a non-elected invention.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murali (U.S. Patent 6,788,836 previously relied upon) in view of Yoshimura et al. (U.S. Patent 5,835,646 previously cited by Applicant).**

4. Regarding claims 1-9 and 11-12, Murali discloses an apparatus for transmitting light comprising: a first substrate 1 having a first surface including at least one first optically active area 30 (semiconductor VCSEL); a second substrate 100 having a second surface positioned in opposing spaced apart relationship from said first surface, where said second surface has at least one second optically active area 32 (photodiode) opposing said at least one first optically active area; and a waveguide (core and cladding) in via 3 between said first and second optically active areas on said first and second surfaces. Said first substrate is an optical circuit board and said second substrate is an IC. Each of said first and second substrates comprises a plurality of

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optically active areas. The first and second surfaces are substantially parallel and spaced apart by a distance, which is in the range of about 0.02 mm to about 0.15 mm (column 3, line 20). See Figure 7.

5. Murali does not expressly disclose a polymer layer disposed between said first and second substrates, a waveguide disposed within said polymer layer and wherein said cladding comprises a second polymer, and wherein said first polymer is a photosensitive fluorinated polymer.
6. Yoshimura et al. discloses a coupling between waveguide arrays or waveguide arrays and device arrays comprising a polymer core and a cladding for transmitting light therebetween, wherein said cladding comprises a second polymer, and wherein said first polymer is a photosensitive fluorinated polymer. Yoshimura et al. further discloses an additional structure (filter) embedded within the polymeric material. See column 4, lines 21-32, column 9, lines 26-29, column 14 lines 43-47 and Figures 24a-c for example.
7. Therefore, it would have been obvious to one having ordinary skill in the art to provide the photosensitive fluorinated polymer core and polymer cladding of Yoshimura et al. in between the coupled substrates of Murali.
8. One of ordinary skill in the art would have been motivated to provide the photosensitive fluorinated polymer core and polymer cladding since the modification would have provided improved transmission efficiency and ease of manufacture by simplifying alignment as disclosed by Yoshimura et al. in columns 14-16. Furthermore, it would also have been obvious to one of ordinary skill in the art to embed at least one or more additional structures (e.g. a filter) within

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said polymeric material to provide additional functionality to the apparatus resulting in a higher degree of integration.

9. Resultantly the space between said first and second substrate surfaces is substantially filled with polymeric material (i.e. the core and cladding material).

10. Regarding claim 10, Murali does not expressly disclose the second substrate to be a waveguide daughter board. However, it is well known in the art to couple waveguide daughter boards to optical circuit boards. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a similar apparatus comprising a waveguide daughter board to provide the above-noted advantages of transmission efficiency and ease of manufacture to the waveguide daughter board.

#### ***Response to Arguments***

11. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37


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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Sarah Song  
Primary Examiner  
Art Unit 2874